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U S DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371

ATTORNEY'S DOCKET NUMBER	
764-00897 US	
U S APPLICATION NO (If known, see 37 CFR 1 5)	
09/582477	
INTERNATIONAL APPLICATION NO.	INTERNATIONAL FILING DATE
PCT/EP98/07948	08 December 1998
PRIORITY DATE CLAIMED	
22 December 1997	

TITLE OF INVENTION
Management System for a Building or For One or More Rooms in a Building

APPLICANT(S) FOR DO/EO/US
Honeywell AG et al.

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. [X] This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. [ ] This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. [ ] This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. [X] A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. [ ] A copy of the International Application as filed (35 U.S.C. 371(c)(2))
   a. [ ] is transmitted herewith (required only if not transmitted by the International Bureau).
   b. [X] has been transmitted by the International Bureau.
   c. [ ] is not required, as the application was filed in the United States Receiving Office (RO/US).
6. [X] A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. [X] Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
   a. [ ] are transmitted herewith (required only if not transmitted by the International Bureau).
   b. [X] have been transmitted by the International Bureau.
   c. [ ] have not been made; however, the time limit for making such amendments has NOT expired.
   d. [ ] have not been made and will not be made.
8. [ ] A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. [X] An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). (unsigned)
10. [ ] A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern document(s) or information included:

11. [ ] An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. [ ] An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. [ ] A FIRST preliminary amendment.
    [ ] A SECOND or SUBSEQUENT preliminary amendment.
14. [ ] A substitute specification.
15. [ ] A change of power of attorney and/or address letter.
16. [ ] Other items or information:

532 Rec'd PCT/PTC 21 JUN 2000

U.S. APPLICATION NO (if known, see 37 CFR 1.5)	INTERNATIONAL APPLICATION NO	ATTORNEY'S DOCKET NUMBER
09/582477	PCT/EP98/07948	764-00897 US

17. [X] The following fees are submitted:

BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) :

Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO **$970.00**

International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO **$840.00**

International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO **$690.00**

International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4) **$670.00**

International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4) **$96.00**

	CALCULATIONS PTO USE ONLY	
ENTER APPROPRIATE BASIC FEE AMOUNT =	$ 970.00	
Surcharge of **$130.00** for furnishing the oath or declaration later than [ ] 20 [ ] 30 months from the earliest claimed priority date (37 CFR 1.492(e)).	$	

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	10 - 20 =	0	X **$18.00**	$ 0	
Independent claims	1 - 3 =	0	X **$78.00**	$ 0	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ **$260.00**	$ 0	
TOTAL OF ABOVE CALCULATIONS =				$ 970.00	
Reduction of 1/2 for filing by small entity, if applicable. A Small Entity Statement must also by filed (Note 37 CFR 1.9, 1.27, 1.28).				$	
SUBTOTAL =				$ 970.00	
Processing fee of **$130.00** for furnishing the English translation later than [ ] 20 [ ] 30 months from the earliest claimed priority date (37 CFR 1.492(f)). +				$	
TOTAL NATIONAL FEE =				$ 970.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). **$40.00** per property +				$	
TOTAL FEES ENCLOSED =				$ 970.00	
				Amount to be refunded:	$
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a. [ ] A check in the amount of $_____ to cover the above fees is enclosed.

b. [X] Please charge my Deposit Account No. 01-1125 in the amount of $ 970.00 to cover the above fees. A duplicate copy of this sheet is enclosed.

c. [ ] The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. _____. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO

SIGNATURE

Robert B. Leonard

NAME

33,946

REGISTRATION NUMBER

Management system for a building or for one or more rooms in a building

The invention relates to a management system for a building or for one or more rooms in a building in accordance with the preamble of Patent Claim 1.

Management systems of the type mentioned at the beginning serve principally for temperature control. Thus, such management systems can be used to set the temperature of each room in the building to an individual level.

Known management systems have at least one control center and at least two components connected to the control center by radio. The control center receives signals from the components or transmits signals to the components. The signals are transmitted within a prescribed frequency range. Since other units operated inside the building also very frequently work within the prescribed frequency range, interference can arise between colliding signals. Because of this, known management systems enjoy only an inadequate reliability with regard to the transmission of signals between the control center and the components.

Starting from this point, the invention is therefore based on the problem of providing a management system having more reliable signal transmission.

To solve this problem, the management system named at the beginning is defined in that each signal is transmitted at at least two different frequencies within the frequency range, at least one of these frequencies being outside the partial frequency range of the frequency range.

The prescribed frequency range is preferably a high frequency band, in particular an ISM band. A partial frequency range within this high frequency band is usually used by the other units operated inside the building. The invention is therefore based on the fundamental idea that the signals to be transmitted between the control center and components can be transmitted redundantly at at least two frequencies, at least one of these frequencies being outside the partial frequency range used for signal transmission by the remaining units operated inside a building. This increases the reliability of the transmission of signals between the control center and the components.

Preferred developments of the invention follow from the subclaims and the description. An exemplary embodiment of the invention is explained in more detail below with the aid of the drawings, in which:

Figure 1 shows a block diagram of the management system according to the invention with a control center and a plurality of components;

Figure 2 shows in a heavily schematic illustration, a transmitter assigned to the control center and some of the components of the management system in accordance with Figure 1;

Figure 3 shows, in a heavily schematic illustration, a receiver assigned to the control center and some of the components of the management system in accordance with Figure 1;

Figure 4 shows a block diagram of the transmitter in accordance with Figure 2;

Figure 5 shows a block diagram of the receiver in accordance with Figure 3;

Figure 6 shows a frequency range used by the management system according to the invention in accordance with Figure 1 for the purpose of signal transmission; and

Figure 7 shows the interplay between a transmitter and a receiver in the case of signal transmission within the management system according to the invention.

The management system illustrated in the drawing serves for individually controlling a temperature level in a building or in one or more rooms in the building. Moreover, such a management system can also be used to control the lighting inside the building and to control the roller shutters of the building. Moreover, the energy expended on controlling the individual temperature level is evaluated.

Figure 1 shows a preferred design of the management system according to the invention, having a control center and a plurality of components. The control center 10 is also denoted as compartment manager. The components are different modules. The components 11 are so-called temperature controllers, which serve for monitoring the temperature level in a room to be controlled, and for setting the desired value of this temperature level via a corresponding setting element 12. The components 13 are electronic heating element valves, with the aid of which the heat output of so-called radiator heating elements can be set. The component 14 is a so-called floor heating controller for setting the heat output of a floor heating system. The components 15 are lighting devices, and the components 16 are roller shutters. Finally, the components 17 are so-called heating cost distributors which are used to monitor the heat output from the heating system.

In the simplest case, the management system according to the invention is provided only with the control center 10 and the components 11, 13. The management system according to the invention can be extended at will by coupling the components 14, 15, 16 and 17 and further components (not illustrated).

The components 11, 13, 14, 15, 16 and 17 are connected to the control center 10 by radio. Consequently, the control center 10 exchanges information or data with the components 11, 13, 14, 15, 16 and 17. The arrows 18 in Figure 1 illustrate the direction of signal flow between the components and the control center 10. Consequently, the signal transmission between the components 11, 13, 14, 15, 16, 17 and the control center 10 is a unidirectional data exchange. The control center 10 therefore receives signals or data from the components 11, 17. Moreover, the control center 10 transmits signals or data to the components 13, 14, 15, and 16.

In order to transmit signals, each component 11 and the control center 10 are assigned corresponding transmitters 19. In order to receive signals, the components 13, 14, 15, 16 and the control center 10 are assigned corresponding receivers. The components 17 likewise have transmitters, but these are not illustrated further in Figure 1.

Figure 2 shows a heavily schematic illustration of the transmitters 19 used in the components 11 and in the control center 10. The transmitter 19 has two inputs 21, 22 and an output 23. The data or signals to be transmitted are present at the input 22. After the signals have been processed in the transmitter 19, they are made available to the output 23 and to an antenna 24 connected to the output 23. The input 21 is

a serial interface (the so-called channel control), which serves for programming channels of the transmitter 19.

In order to illustrate the mode of operation of the transmitter 19 in accordance with Figure 2, reference is made below to Figure 4. Figure 4 shows in turn the two inputs 21, 22, of the output 23 and the antenna 24 connected to the output 23. The data to be transmitted are fed to an oscillator 25 via the input 22. The oscillator 25 is an oscillator, a so-called voltage-controlled oscillator (VCO), whose output frequency 26 can be controlled via its input voltage 27. Since the transmitter 19 is intended to transmit as far as possible at a precise frequency, the output frequency 26 of the oscillator 25 must be as accurate as possible. For this purpose, the output frequency 26 of the oscillator 25 is fed to a comparator 28 which compares the output frequency 26 with an auxiliary frequency 29 or a reference frequency. In the event of a deviation between the output frequency 26 and the auxiliary frequency 29, the comparator 28 changes its output voltage and thus the input voltage 27 of the oscillator 25. This ensures that the output frequency 26 is as accurate as possible. The auxiliary frequency 29 is made available to the comparator 28 via an oscillator, specifically a quartz oscillator 30. The output signal 26 of the oscillator 25, or the signal to be transmitted is fed to the antenna 24 via an amplifier 31 and via a filter 32 connected downstream of the amplifier 31.

A receiver 20 used in the control center 10 and in the components 13, 14, 15, 16 is shown in a coarsely schematic way in Figure 3. The receiver 20 has two inputs 33, 34 and an output 35. Connected to the input 34 is an antenna 36 which receives the signal to be received by the receiver 20. The input 33 is, in

turn, a serial interface (the so-called channel control), which serves for programming the channels of the receiver 20. The signals or data received by the receiver 20 are made available to the respective component via the output 35. It is possible to provide as an option a further output 37 from which, for example, additional information on the field strength of the receiver 27 can be extracted.

The functional principle of the receiver 20 in accordance with Figure 3 follows from the block diagram in accordance with Figure 5. The inputs 33, 34, the antenna 36 connected to the input 34, and the outputs 35, 37 of the receiver 20 are shown here, in turn. The task of the receiver 20 is to filter the signal to be received at a specific frequency out of the frequency band captured via the antenna 36 and present at the input 34. For this purpose, the signal present at the input 34 is led via two filters 38, 39 and an amplifier 40 connected between the filters 38, 39. An output signal of the filter 39 is mixed with an output frequency 41 of an oscillator 42 in a mixer 43, and the output signal of the latter is filtered in a filter 44. In order for the output frequency 41 of the oscillator 42 to be as accurate as possible, this frequency is compared, in turn, in a comparator 45 with an auxiliary frequency 46 which is made available by a quartz oscillator 47. The oscillator 42 is, in turn, a so-called voltage-controlled oscillator. The filtered output signal of the mixer 43 is mixed in a second mixer 48 with the auxiliary frequency 46 of the quartz oscillator 47. The output signal thereof is then filtered in a further filter 49, amplified in an amplifier 50 and demodulated in a demodulator 51. Before being provided at the output 35, the output signal of this demodulator is amplified, in turn, in a further amplifier 52 and filtered in a filter 53 connected downstream thereof.

Because of the double mixing of the multiply filtered signals present at the input 34, the receiver 20 is a so-called superheterodyne receiver.

According to the invention, the signals to be transmitted and to be received by the components 11, 13, 14, 15, 16, 17 and by the control center 10 are transmitted in a prescribed frequency range 54. Figure 6 shows this frequency range 54, which is a high frequency range, specifically an ISM band. The frequency range 54 is therefore between 433.05 MHz and 434.79 MHz.

A partial frequency range 55 of the frequency range 54 is usually already commercially used in some other way. Thus, most units operated in a building and communicating by radio transmit in this partial frequency range 55. This partial frequency range 55 is between 433.60 MHz and 434.40 MHz. The partial frequency range 55 is therefore positioned or arranged approximately about the band center frequency of the frequency range 54.

In order to avoid collisions between the signals to be received or to be transmitted by the control center 10 and the components 11, 13, 14, 15, 16, 17 and signals from other units, and in order thereby to enhance the reliability of the signal transmission of the management system according to the invention, each signal is transmitted at at least two different frequencies within the frequency band 54, at least one of these frequencies being outside the partial frequency range 55 of the frequency range 54. Not only does this ensure redundant signal transmission, it is taken into account, rather, that more reliable signal transmission is possible in the case of transmission of

signals at frequencies above the partial frequency range 55.

Since the components 17, the so-called heating cost distributors, can be foreign units, it may be noted here that it is possible for the components 17 also to use only the partial frequency range 55 for signal transmission.

In accordance with Figure 6, the frequency band 54 is subdivided into a plurality of channels 56 of identical channel width. These are channels C1 to C32, of which only the channels C1, C5, C10, C15, C20, C25 and C30 are labeled in Figure 6. The channel width of the channels 56 is 50 KHz.

In accordance with Figure 6, the channels C11 to C26 are within the partial frequency range 55. The channels C1 to C10 are below the partial frequency range 55, while the channels C27 to C32 are above it but within the frequency range 54. Consequently, a total of 32 channels with a channel width of 50 KHz are available for signal transmission within the management system according to the invention.

Each signal to be transmitted is preferably transmitted at three different frequencies, each of these frequencies being assigned to a different channel 56 within the frequency range 54. At least one of the frequencies or at least one of the relevant channels is outside the partial frequency range 55. Preferably at least a first of the three frequencies or a first of the three channels is below the partial frequency band 55, and at least a second of the three frequencies or a second of the three channels is above the partial frequency band 55.

In detail, the transmitter 19 of the control center 10 transmits the signals, which are to be transmitted to the components 13, specifically to the electronic heating element valves, at three different frequencies, a first frequency being within the channel C1, a second frequency within the channel C5 and a third frequency within the channel C30. The receivers 20, assigned to the transmitter 19 of the control center 10, of the components 13 scans these three channels C1, C5 and C30 in order to receive the transmitted signals. Each channel is scanned in this case at a step interval of 10 KHz. Consequently, five scanning steps are required per channel.

The transmitters 19 of the components 11, specifically the temperature controller, transmits each signal to be transmitted to the control center 10 in a temporally offset fashion at three different frequencies, a first frequency being within the channel C2, a second frequency within the channel C6 and a third frequency within the channel C29. In turn, the receiver 20, assigned to the transmitters 19 of the components 11, of the control center 10, scans each of these three channels with in each case five scanning steps and a step interval of 10 KHz. The remaining available channels are used in a corresponding way by the components 14, 15, 16, and 17.

Figure 7 shows by way of example the interplay between a transmitter 19 and a receiver 20, the transmitter 19 being the transmitter 19 of the control center 10, and the receiver 20 being a receiver 20 of a component 13, specifically of an electronic heating element valve. Shown under a) in Figure 7 is the channel loading and the transmission response of the transmitter 19 of the control center 10, and shown under b), c), d), and e) of Figure 7 are possible operating states of the receiver 20 of a component 13. In this regard:

The transmitter 19 of the control center 10 transmits each signal, to be transmitted to the components 13, sequentially in time at three different frequencies, each of these three frequencies being assigned to a different channel, specifically the channels 1, 5 and 30, of the frequency range 54. The time required for transmitting the signals on each of the channels is composed in each case of a synchronization component 57 a data component 58 and a channel transfer component 59. A bar 60 in Figure 7 consequently specifies the total transmission time of the control center 10 for the purpose of temporally offset transmission of a signal on three different channels.

The actual information of the signal is transmitted during the respective data component 58. The upstream synchronization components 57 serve for compensating the tolerances of the transmitter 19 and receiver 20. It is necessary to make sufficient time available to the receiver 20 in order to find the concrete frequency at which the signal to be transmitted is transmitted within each channel. For this purpose, an appropriate synchronization component 57 is placed before each data component 58. The channel transfer component 59 gives the transmitter 19 sufficient time in order, for example, to change from channel 1 to channel 5 or else from channel 5 to channel 30 so as the signal can be transmitted temporally offset on different channels.

Section b) in Figure 7 reproduces a possible operating state of the receiver 20 for the purpose of receiving a signal transmitted by the transmitter 19. In this case, which reproduces the most favorable situation with regard to the operating state of the receiver 20, the transmitting frequency of the transmitter 19 automatically corresponds to the receiving frequency of the receiver 20, with the result that the receiver 20 can receive the signal without prior channel scanning.

The required receiving time of the receiver 20 is therefore limited to a synchronization component 61 and a data component 62, the data component 62 corresponding to the data component 58. The operating time of the receiver 20 for receiving the transmitted signal is the least in this case.

Section c) in Figure 7 shows a further possible operating state of the receiver 20. In this operating state, the transmitting frequency of the transmitter 19 and the receiving frequency of the receiver 20 deviate from one another, with the result that the receiver 20 must scan the channel or each channel for the transmitting frequency. In the worst case, the receiver 20 must scan all three channels and traverse two channel transfers. For this purpose, the receiver 20 requires a time which corresponds to the scanning component 63 illustrated in section c) of Figure 7. The actual transmission of the signal during the data component 62 can be performed only after this scanning component 63. The case in which no channel interference is present, is therefore the worst case with regard to the required receiving time of the receiver 20.

Sections d) and e) of Figure 7 show further possible operating states of the receiver 20. In terms of principle, the operating state in accordance with section b) corresponds in this case to the operating state in accordance with section d), and the operating state in accordance with section c) corresponds to the operating state in accordance with section e), a channel interference with respect to channel 1 occurring however, in the operating states in accordance with sections d) and e). This co-channel interference is represented in Figure 7 by the hatched region 64.

Section d) relates to the case in which the receive frequency of the receiver 20 corresponds immediately to the transmitter frequency of the transmitter 19, the signal transmission within channel 1 being disturbed, however, as a consequence of a signal collision and/or interference. Because of this, the signal to be transmitted cannot be received during its transmission on channel 1. Consequently, the signal must be received during its transmission on channel 5. The time required for this corresponds to a channel transfer component 65 corresponding to the channel transfer component 59 plus a scanning component 63 and the data component 62. Consequently, the signal is received by the receiver during its transmission on channel 5.

The case shown in section e) corresponds to the case shown in section c) with a disturbance of channel 1. Consequently, it is necessary here, as well, to traverse a channel transfer component 65 and a scanning component 63 with reference to channel 5 before the actual signal transmission can be performed during the data component 62.

The temporally offset transmission of each signal to be transmitted on different channels ensures that in the event of disturbance of one channel the signal can be received on another channel during its transmission. This increases the reliability of signal transmission. Since, furthermore, at least one of the channels is outside the partial frequency range 55, channel interference is minimized in any case. This further increases the reliability of signal transmission.

List of reference numerals

10	Control center	38	Filter
11	Component	39	Filter
12	Setting element	40	Amplifier
13	Component	41	Output frequency
14	Component	42	Oscillator
15	Component	43	Mixer
16	Component	44	Filter
17	Component	45	Comparator
18	Arrow	46	Auxiliary frequency
19	Transmitter	47	Quartz oscillator
20	Receiver	48	Mixer
21	Input	49	Filter
22	Input	50	Amplifier
23	Output	51	Demodulator
24	Antenna	52	Amplifier
25	Oscillator	53	Filter
26	Output frequency	54	Frequency range
27	Input voltage	55	Partial frequency range
28	Comparator	56	Channel
29	Auxiliary frequency	57	Synchronization component
30	Quartz oscillator	58	Data component
31	Amplifier	59	Channel transfer component
32	Filter	60	Bar
33	Input	61	Synchronization component
34	Input	62	Data component
35	Output	63	Scanning component
36	Antenna	64	Range
37	Output	65	Channel transfer component

Patent Claims

1. A management system for a building or for one or more rooms in a building, having at least one control center (10) and at least two components (13, 14, 15, 16) connected to the control center (10) by radio, the control center (10) receiving signals from the components (11) or transmitting signals to the components (13, 14, 15, 16), and the signals being transmitted within a prescribed range (54), wherein the signals are transmitted at at least two different frequencies within the frequency range (54), at least one of these frequencies being outside the partial frequency range (55) of the frequency range (54).

2. The management system as claimed in claim 1, wherein the signals are transmitted in a temporally offset fashion at at least two different frequencies.

3. The management system as claimed in claim 1 or 2, wherein the signals are transmitted sequentially in time at three different frequencies, at least a first of the three frequencies being below the partial frequency range (55), and at least a second of the three frequencies being above the partial frequency range (55).

4. The management system as claimed in one or more of claims 1 to 3, wherein the frequency range (54) corresponds to a high frequency band, in particular an ISM band.

5. The management system as claimed in claim 4, wherein the frequency range (54) is between

433 MHz and 435 MHz, in particular between 433.05 MHz and 434.79 MHz.

6. The management system as claimed in one or more of claims 1 to 5, wherein the frequency range (54) is subdivided into a plurality of channels (56) of identical channel width.

7. The management system as claimed in claim 6, wherein the channel width is 50 KHz.

8. The management system as claimed in one or more of claims 1 to 7, wherein the control center (10) and the components (11, 13, 14, 15, 16) have at least in each case one transmitter (19) and/or at least in each case one receiver (20), and wherein each transmitter (19) transmits each of these signals to be transmitted at at least two different frequencies, each of these frequencies being assigned to a different channel (56) within the frequency range (54).

9. The management system as claimed in claim 8, wherein a receiver (20) assigned to the transmitter (19) scans each of the channels (56) on which the transmitter (19) transmits the signals to be transmitted, each channel (56) being scanned at a step interval of 10 KHz.

10. The management system as claimed in one or more of claims 1 to 9, wherein the partial frequency range (55) is in a range, frequently used by foreign units, at about the band center frequency of the frequency range (54), preferably between 433.60 MHz and 434.40 MHz.

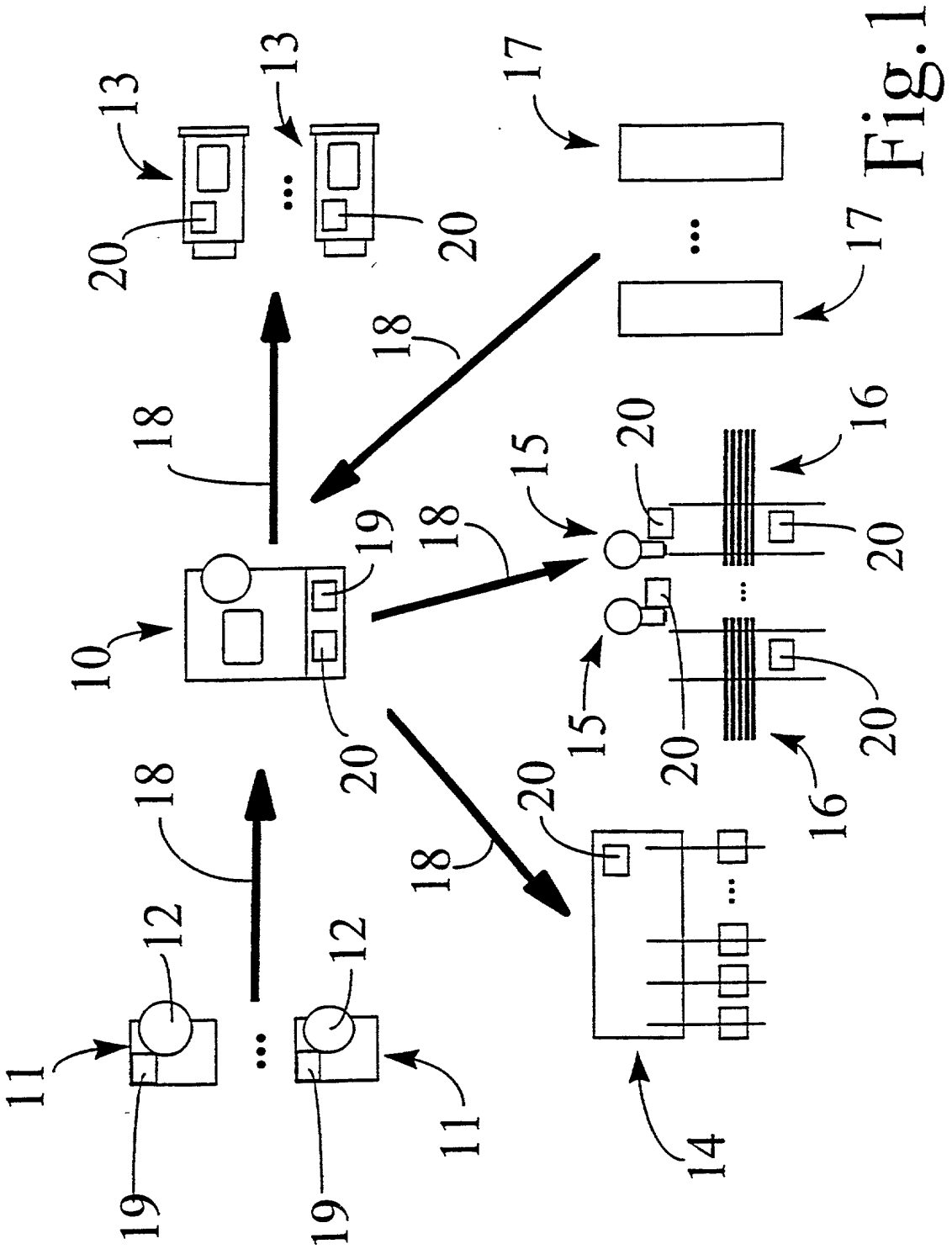
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Fig.1

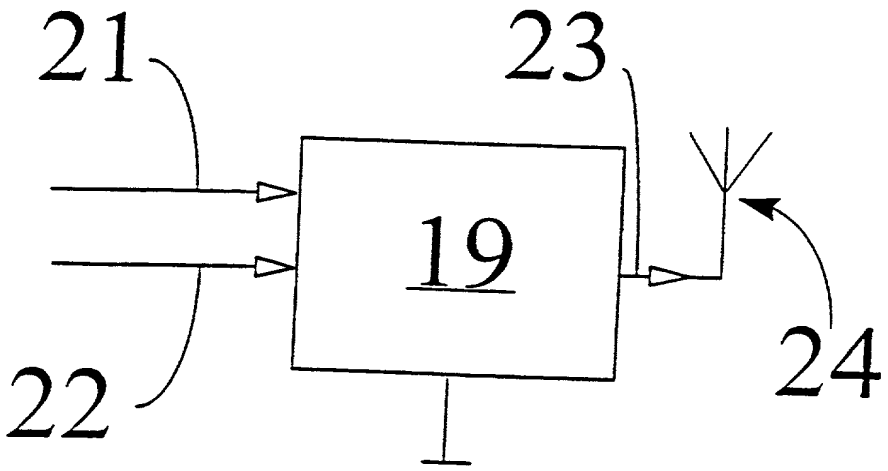

Fig.2

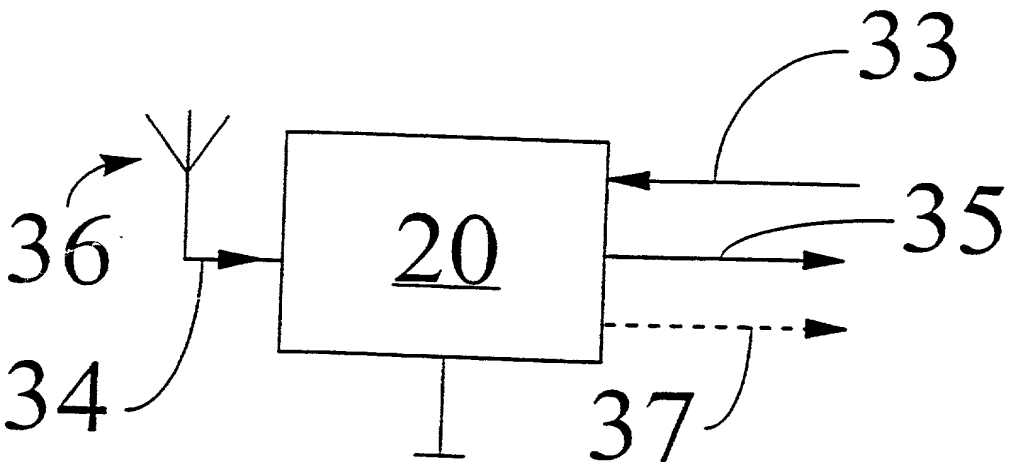

Fig.3

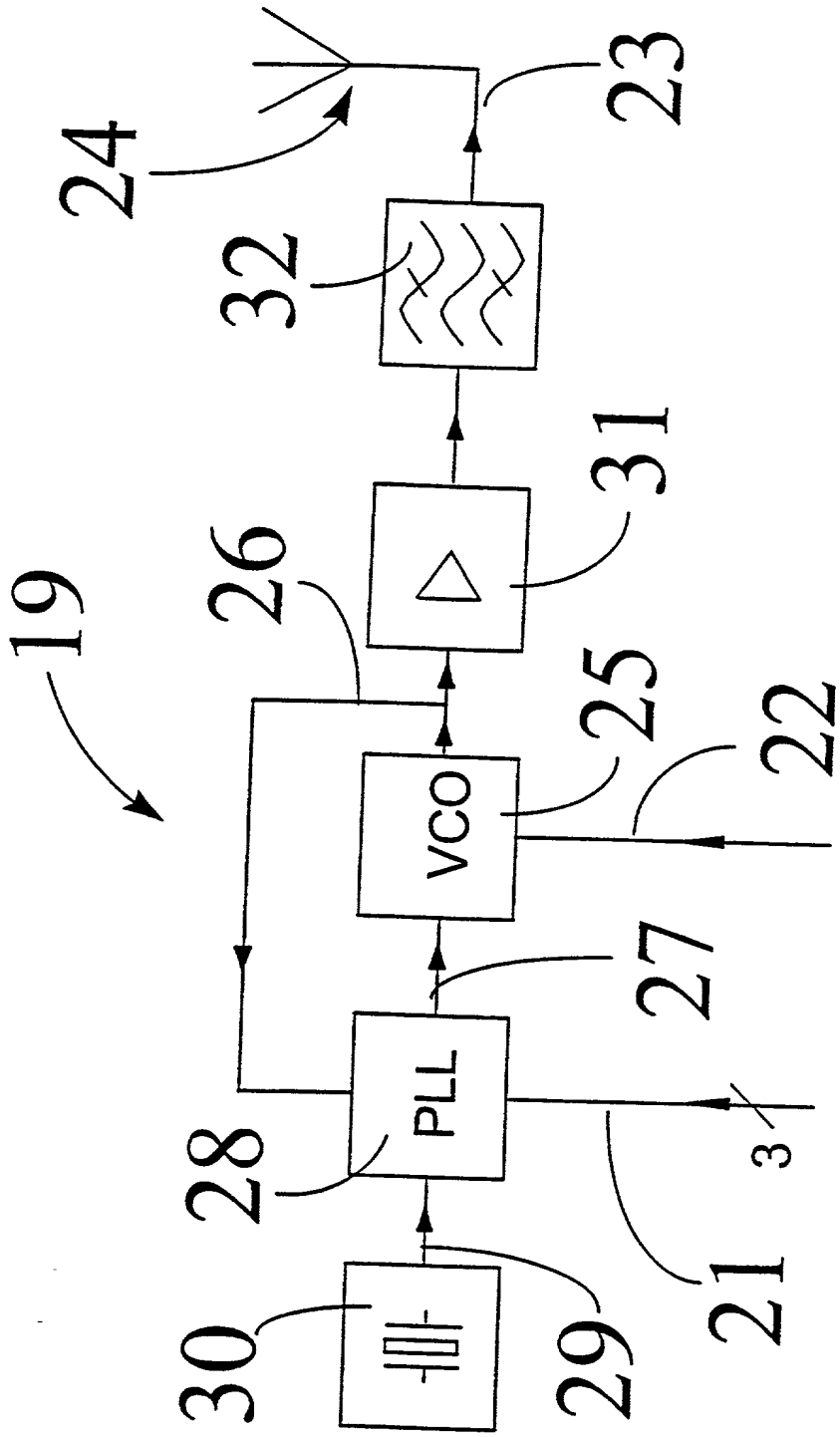

Fig.4

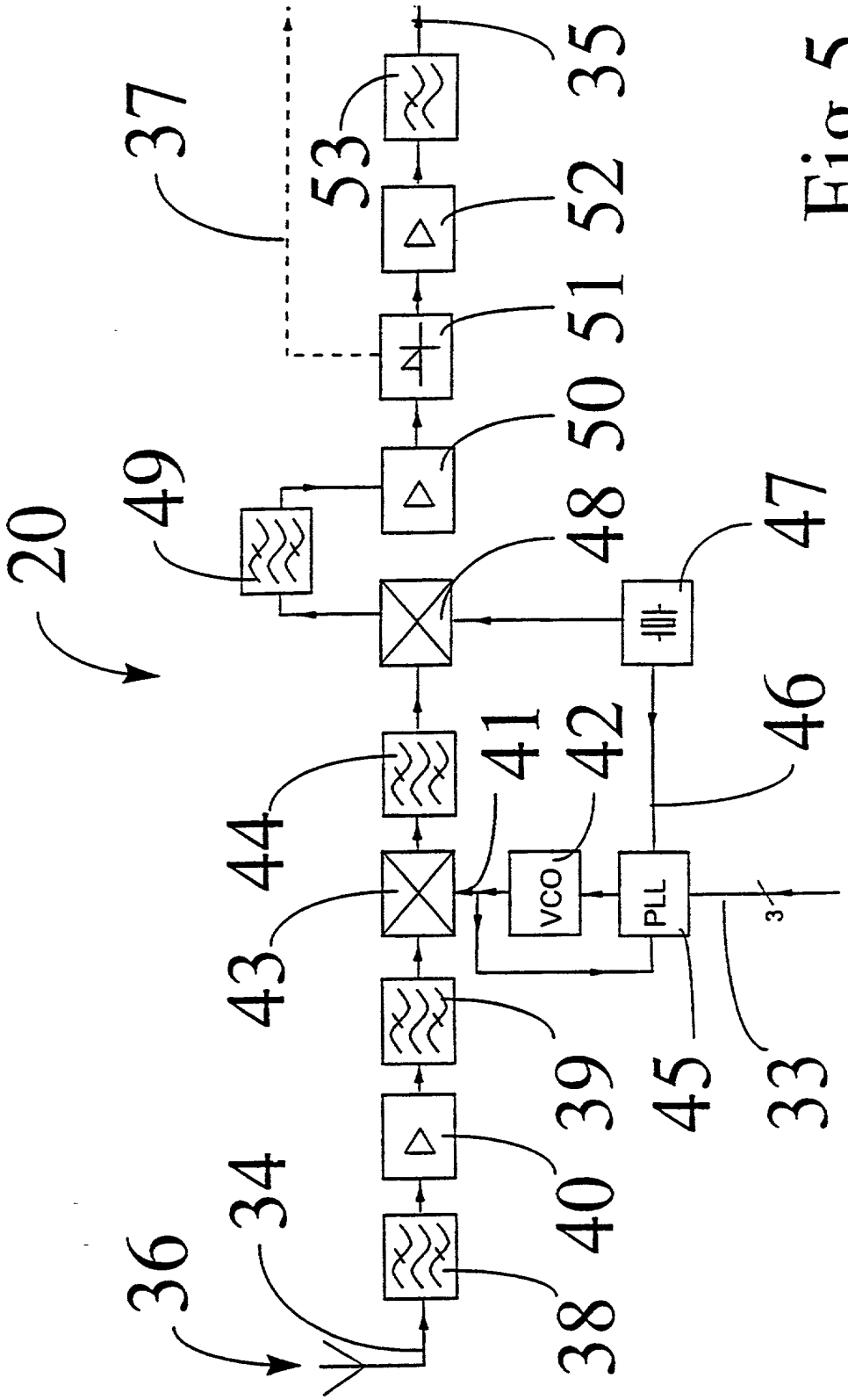
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Fig.5

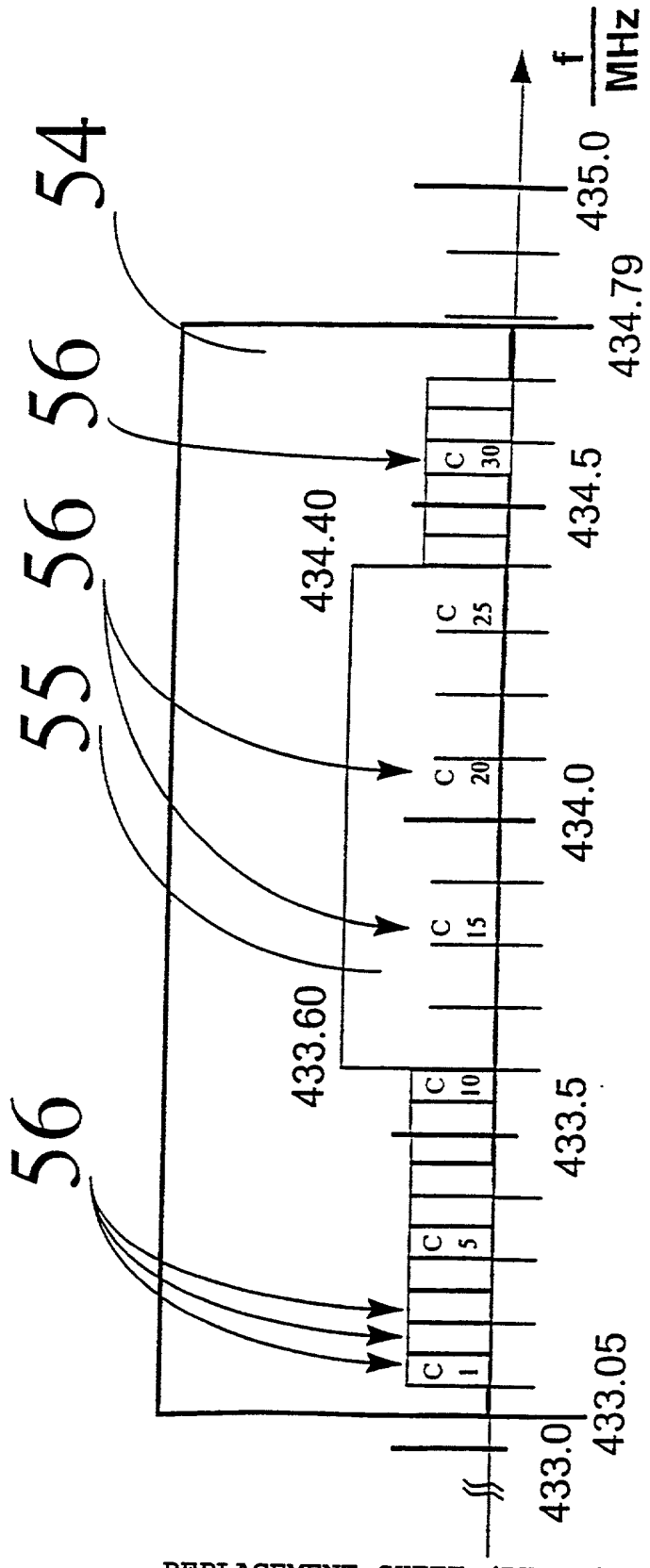
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Fig.6

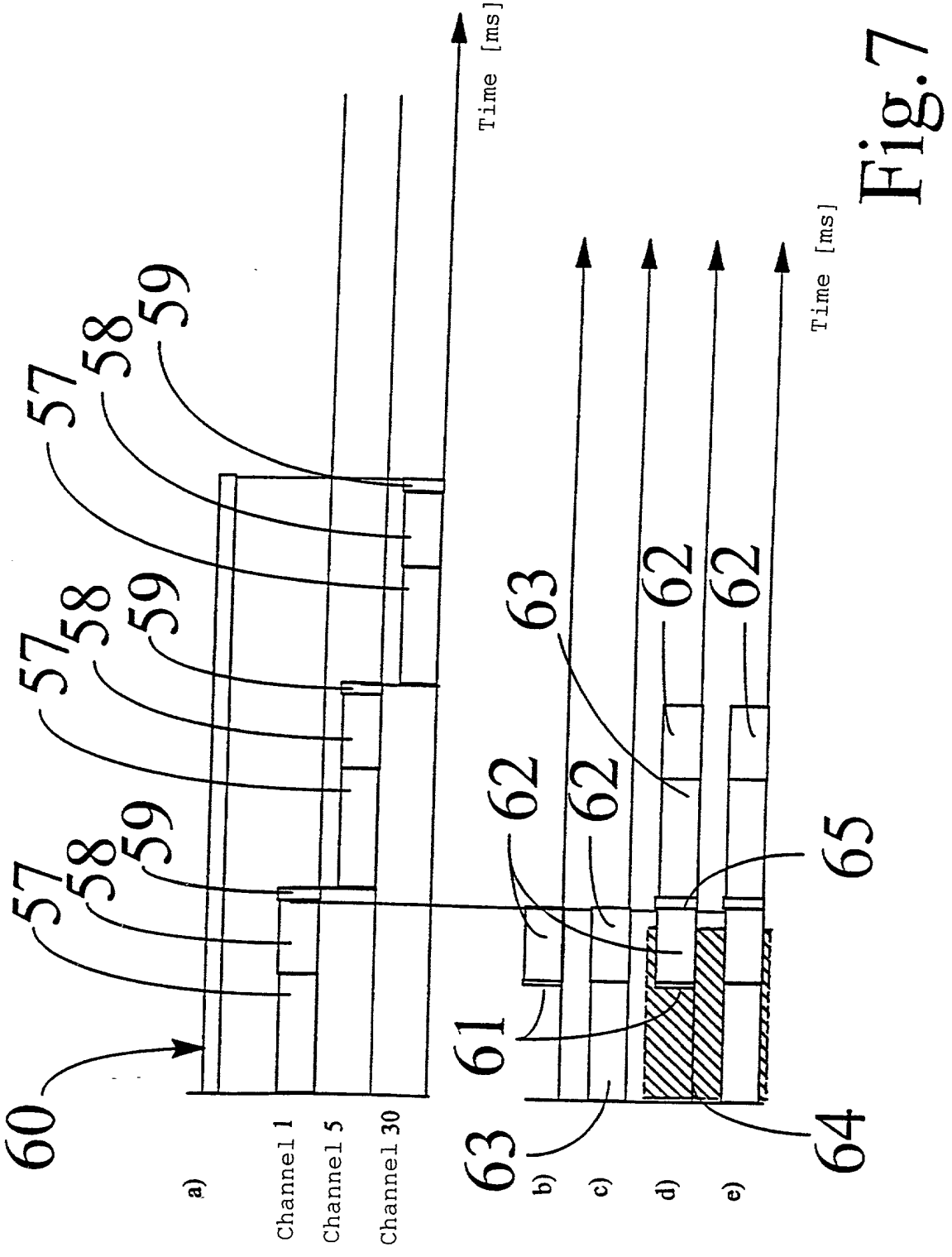
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Fig.7

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DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

☐ Declaration Submitted with Initial Filing OR ☒ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)

Attorney Docket Number	764-00897 US
First Named Inventor	
COMPLETE IF KNOWN	
Application Number	09 /582,477
Filing Date	June 21, 2000
Group Art Unit	
Examiner Name	

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

MANAGEMENT SYSTEM FOR A BUILDING OR FOR ONE OR MORE ROOMS IN A BUILDING

(Title of the Invention)

the specification of which
☐ is attached hereto
OR
☒ was filed on (MM/DD/YYYY) 08 December 1998 as United States Application Number or PCT International Application Number PCT/EP98/07948 and was amended on (MM/DD/YYYY) _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached? YES	NO
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

Application Number(s)	Filing Date (MM/DD/YYYY)

☐ Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

Burden Hour Statement: This form is estimated to take 0.4 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box → ☐

PTO/SB/01 (12-97)
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DECLARATION — Utility or Design Patent Application

I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application or PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number *(If applicable)*

☐ Additional U.S. or PCT international application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: ☒ Customer Number 000128 → *Place Customer Number Bar Code Label here*

OR

☐ Registered practitioner(s) name/registration number listed below

Name	Registration Number	Name	Registration Number

☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto.

Direct all correspondence to: ☒ Customer Number or Bar Code Label 000128 *OR* ☐ Correspondence address below

Name					
Address					
Address					
City		State		ZIP	
Country		Telephone		Fax	

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor: ☐ A petition has been filed for this unsigned inventor

Given Name (first and middle [if any])	Family Name or Surname
RENKE	BIENERT

Inventor's Signature	✓ R Bienert					Date	2000/08/30
Residence: City	✓ SCHOENAICH	State		Country	✓ GERMANY	Citizenship	✓ DT
Post Office Address	✓ SCHWABENSTRASSE 51 REX						
Post Office Address							
City	SCHOENAICH	State		ZIP		Country	✓ GERMANY

☐ Additional inventors are being named on the ____ supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto

1-00

Please type a plus sign (+) inside this box → ☐

PTO/SB/02A (3-97)
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DECLARATION

ADDITIONAL INVENTOR(S)
Supplemental Sheet
Page ___ of ___

Name of Additional Joint Inventor, if any:	☐ A petition has been filed for this unsigned inventor					
Given Name (first and middle [if any])		Family Name or Surname				
FRITZ		JAUSS				
Inventor's Signature	F. Jauss				**Date**	2000/08/30
Residence: City	SCHOENAICH	**State**		**Country** GERMANY	**Citizenship** DT	
Post Office Address	CHERUSKERSTRASSE 56 DEX					
Post Office Address						
City	SCHOENAICH	**State**		**ZIP**	**Country** GERMANY	

Name of Additional Joint Inventor, if any:	☐ A petition has been filed for this unsigned inventor					
Given Name (first and middle [if any])		Family Name or Surname				
Inventor's Signature					**Date**	
Residence: City		**State**		**Country**	**Citizenship**	
Post Office Address						
Post Office Address						
City		**State**		**ZIP**	**Country**	

Name of Additional Joint Inventor, if any:	☐ A petition has been filed for this unsigned inventor					
Given Name (first and middle [if any])		Family Name or Surname				
Inventor's Signature					**Date**	
Residence: City		**State**		**Country**	**Citizenship**	
Post Office Address						
Post Office Address						
City		**State**		**ZIP**	**Country**	

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DECLARATION — Supplemental Priority Data Sheet

Additional foreign applications:

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached? YES	NO
			☐	☐	☐
			☐	☐	☐
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			☐	☐	☐
			☐	☐	☐
			☐	☐	☐

Additional provisional applications:

Application Number	Filing Date (MM/DD/YYYY)

Additional U.S. applications:

U.S. Parent Application Number	PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number *(if applicable)*

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DECLARATION

REGISTERED PRACTITIONER INFORMATION (Supplemental Sheet)

Name	Registration Number	Name	Registration Number

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